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**DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
BASE REALIGNMENT AND CLOSURE PROGRAM**

**DECISION DOCUMENT FOR
FORT DES MOINES
DES MOINES, IOWA**

PREPARED FOR:

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*In accordance with Army regulation 200-2, this document is intended by the
Army to comply with the National Environmental Policy Act of 1969*



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TABLE OF CONTENTS

	<u>Page</u>
List of Figures and Tables	ii
List of Acronyms and Abbreviations	iii
 1.0 DECLARATION OF THE DECISION DOCUMENT	 1
1.1 Site Name and Location	1
1.2 Statement of Basis and Purpose	1
1.3 Assessment of the Site	1
1.4 Description of the Selected Remedy	1
1.5 Statutory Determinations	2
 2.0 DECISION SUMMARY	 4
2.1 Site Description	4
2.1.1 Location and Adjacent Land Uses	4
2.1.2 Geology and Soils	4
2.1.3 Groundwater and Surface Water Resources	7
2.2 Site History and Enforcement Activities	7
2.3 Highlights of Community Involvement	7
2.4 Scope and Role of Response Action	8
2.5 Site Characteristics	9
2.6 Summary of Site Risks	11
2.7 Description of Alternatives	12
2.7.1 Description of Categories	12
2.7.1.1 Category 1	12
2.7.1.2 Category 2	13
2.7.1.3 Category 3	13
2.7.2 Site-Wide Alternatives	14
2.8 Summary of Comparative Analysis of Alternatives	18
2.8.1 Overall Protection of Human Health and the Environment	20
2.8.2 Compliance with ARARs	20
2.8.3 Long-term Effectiveness and Permanence	21
2.8.4 Reduction of Toxicity, Mobility, or Volume	21
2.8.5 Short-term Effectiveness	21
2.8.6 Implementability	22
2.8.7 Cost	22
2.8.8 State Acceptance	22
2.8.9 Community Acceptance	24
2.9 Summary of the Preferred Alternative	24
2.10 Documentation of Significant Changes	25
 3.0 RESPONSIVENESS SUMMARY	 26

TABLE OF CONTENTS

Page

LIST OF FIGURES

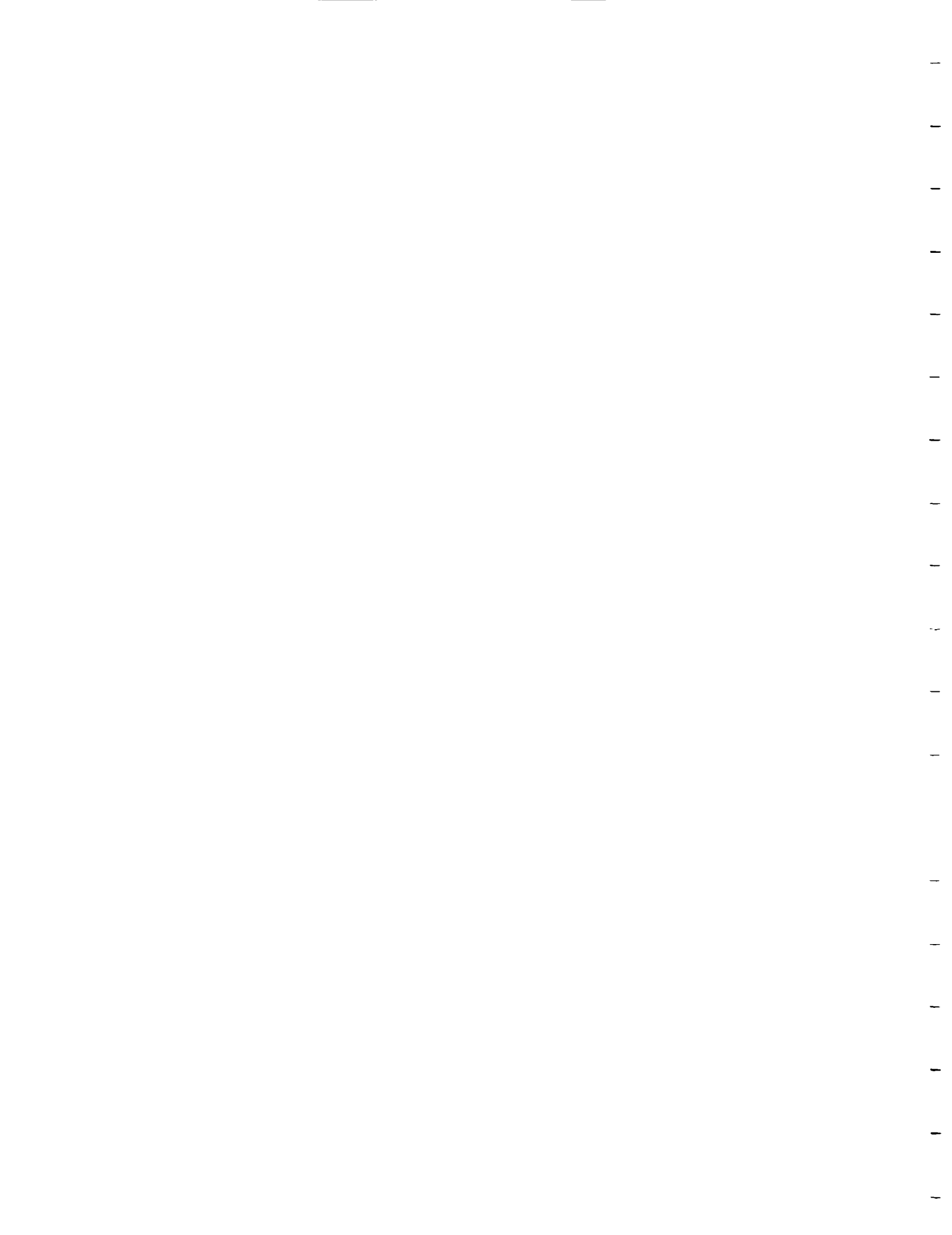
1.	General Location of Fort Des Moines, Iowa	5
2.	Site Layout, Fort Des Moines, Iowa	6
3.	Locations of Base Wide Areas of Concern Identified in the EI/RA/AA Report, Fort Des Moines, Iowa	10

LIST OF TABLES

1.	Summary of Alternatives	15
2.	Evaluation of Alternatives	19
3.	Selected Alternatives and Cost Estimate Summary	23

LIST OF ACRONYMS AND ABBREVIATIONS

AA	Alternatives Analysis
ACHP	Advisory Council on Historic Preservation
ACM	asbestos containing material
ARARs	Applicable or Relevant and Appropriate Requirements
beg	below existing grade
BRA	Baseline Risk Assessment
BRAC	Base Realignment and Closure Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DoD	Department of Defense
EI	Environmental Investigation
EPA	U.S. Environmental Protection Agency
FDM	Fort Des Moines
FUDS	Formerly Utilized Defense Site
gpm	gallons per minute
HUD	U.S. Department of Housing and Urban Development
LBP	lead-based paint
MCL	maximum contamination level
MW	Monitoring Well
msl	mean sea level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operations and Maintenance
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
POTW	Publicly-owned Treatment Works
ppm	parts per million
RA	Risk Assessment
RBC	risk-based concentration
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
UDA	unrestricted disposal area
USAEC	U.S. Army Environmental Center
UST	underground storage tank
VOC	volatile organic compound
WAAC	Women's Army Auxiliary Corps



1.0 DECLARATION OF THE DECISION DOCUMENT

1.1 Site Name and Location

Fort Des Moines (FDM), Des Moines, Iowa.

1.2 Statement of Basis and Purpose

This Decision Document presents the selected remedial actions for 12 Areas of Concern identified at Fort Des Moines, Iowa. The remedial actions were chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and, to the extent practical, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This Decision Document is based on the administrative record for the site. The remedy selected by the U.S. Army was provided to the State of Iowa and the U.S. Environmental Protection Agency (EPA), Region VII.

1.3 Assessment of the Site

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Decision Document, may present an imminent and substantial endangerment to public health, welfare, and/or the environment.

1.4 Description of the Selected Remedy

In summary, 12 areas of environmental concern were identified at Fort Des Moines. These areas were:

- unrestricted disposal area (UDA-1);
- underground storage tanks (USTs);
- polychlorinated biphenyl (PCB) transformers;
- small arms firing ranges;
- miscellaneous stored chemicals;
- pesticide contamination within Building 138;
- asbestos-containing material (ACM);
- radon;
- lead-based paint (LBP);
- contaminated groundwater;
- surficial soils in the vicinity of Building 138; and
- contaminated sediments in Blank Park Creek.

In order to protect human health and the environment, and to restore the site to a level that will permit acceptable future use, a series of remedial action alternatives were developed and evaluated for each area of concern. After screening out those remedial actions that were considered not to be effective, the most appropriate solutions were grouped into three categories:

- Category 1 - Single remedy solutions for those areas of concern having only one recommended cleanup solution;
- Category 2 - Remedial actions related to radon, asbestos, and LBP in existing buildings; and

- Category 3 - Remedial actions related to groundwater cleanup.

Based on the evaluation of alternatives, the following remedial actions were chosen;

- Remediation of all areas of concern grouped in Category 1 (UDA-1, USTs, PCB transformers, small arms firing ranges, disposal of miscellaneous chemicals, and decontamination of Building 138);
- No remedial actions for building-specific issues in Category 2 (radon, asbestos, and LBP); and
- Removal of storm sewer line and associated contaminated soils between Buildings 67 and 138 and implementation of a groundwater monitoring program to ensure that source removal would result in natural attenuation of groundwater contaminants for the Category 3 concerns.

The Army's preferred option for addressing building-specific concerns (i.e., those in Category 2) is full disclosure of these building-specific concerns prior to deed transfer for the buildings that are sold.

To ensure that the preferred alternative for groundwater remediation (Category 3) achieves cleanup objectives (i.e., compliance with drinking water standards), the shallow aquifer will be monitored at least quarterly at selected monitoring wells. When the groundwater cleanup objectives have been demonstrated, the cleanup will be considered complete. It is expected that the groundwater monitoring program would continue for a minimum of 1 year from completion of the sewer and soil removal activities.

1.5 Statutory Determinations

Because the selected remedy for remediating groundwater will initially result in contaminated groundwater being present beneath the site at concentrations possibly above regulatory levels, a review of the groundwater monitoring data will need to be conducted after the first year. The purpose of the review is to ensure that the selected remedy (soil/sewer removal) continues to improve groundwater quality. The first year review will include consideration of the following elements:

- the effectiveness of the soil and sewer removal activities in eventually achieving groundwater cleanup levels; and
- ensuring that, through the implementation of deed restrictions, the contaminated groundwater in the shallow aquifer is not used.

The selected remedies are protective of human health and the environment, comply with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial actions, and are cost-effective. These remedies utilize permanent solutions and alternative treatment technology to the maximum extent practical, and satisfy, as much as is practical, the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

Col. Harold K. Miller, Jr.
Commander, U.S. Army Garrison,
Fort McCoy

Date

Arthur T. Dean
Major General, U.S. Army
Deputy Chief of Staff for
Personnel and Installation Management

Date

2.0 DECISION SUMMARY

This decision summary provides an overview of the problems posed by the site-specific factors and analysis that led to selection of the remedies chosen for the Fort Des Moines site. This section also explains the rationale for the remedy selection and describes how the selected remedies satisfy the statutory requirements.

2.1 Site Description

2.1.1 Location and Adjacent Land Uses

Present day Fort Des Moines (FDM) consists of 53.3 acres that represent the remaining portion of a former U.S. Army cavalry post originally established in 1903 on 640 acres. FDM was included in the Department of Defense (DoD) Base Realignment and Closure (BRAC) program, which requires that the current FDM facility be eventually closed with the objective being the transfer and reuse of the property. Under this program, it is probable that the Army will eventually relinquish ownership of the remaining FDM parcels to another government agency or private interests. Light industry or future residential use is considered to be the most likely future use scenario for FDM.

FDM is an open post located in southern Polk County within the city limits of Des Moines, 1 mile east of the Des Moines Municipal Airport (Figure 1). Much of the original FDM property has already been transferred and is now used for various commercial, residential, and recreational purposes. Most buildings at FDM are currently unoccupied or are used for the storage of reserve troop equipment or maintenance equipment.

The current FDM installation is bounded by a commercial/residential area to the north, a golf course to the east and south, Blank Park Zoo to the south, and Blank Park to the west. An Army Reserve enclave, just outside the study area, is located along the northeast boundary. Topography across the site is gently sloping toward the south and southwest, with elevations varying from approximately 950 feet above mean sea level (msl) in the central and northern areas of the installation to approximately 920 feet above msl in the south central and southwest portions of the site near the boundary with the Blank Park Zoo. Figure 2 shows the current FDM boundary, some of the neighboring properties, and the general layout of the buildings.

2.1.2 Geology and Soils

Surficial geology in the FDM area consists of glacial-drift materials (i.e., tills and other ice-contact deposits) associated with loess, a wind-deposited silty clay/silty sand mixture. Tills consist of poorly sorted silt/clay mixtures with some sand and gravel deposits, and may be interbedded in some areas with buried channel outwash deposits that consist predominantly of sand and gravel. The total thickness of overburden materials, including soils, glacial drift deposits, and buried outwash channels, has been estimated to be approximately 50 feet. The underlying bedrock is reportedly composed of shale and limestone units (with some interbedded sandstone and coal beds) of the Pennsylvania Cherokee and Marmaton Groups. These lithologic groups may reach a thickness of 500 feet in some areas of Polk County. The Cherokee and Marmaton Groups are underlain by Mississippian limestone and dolomite deposits of the Meramac, Osage, and Kinderhook series.

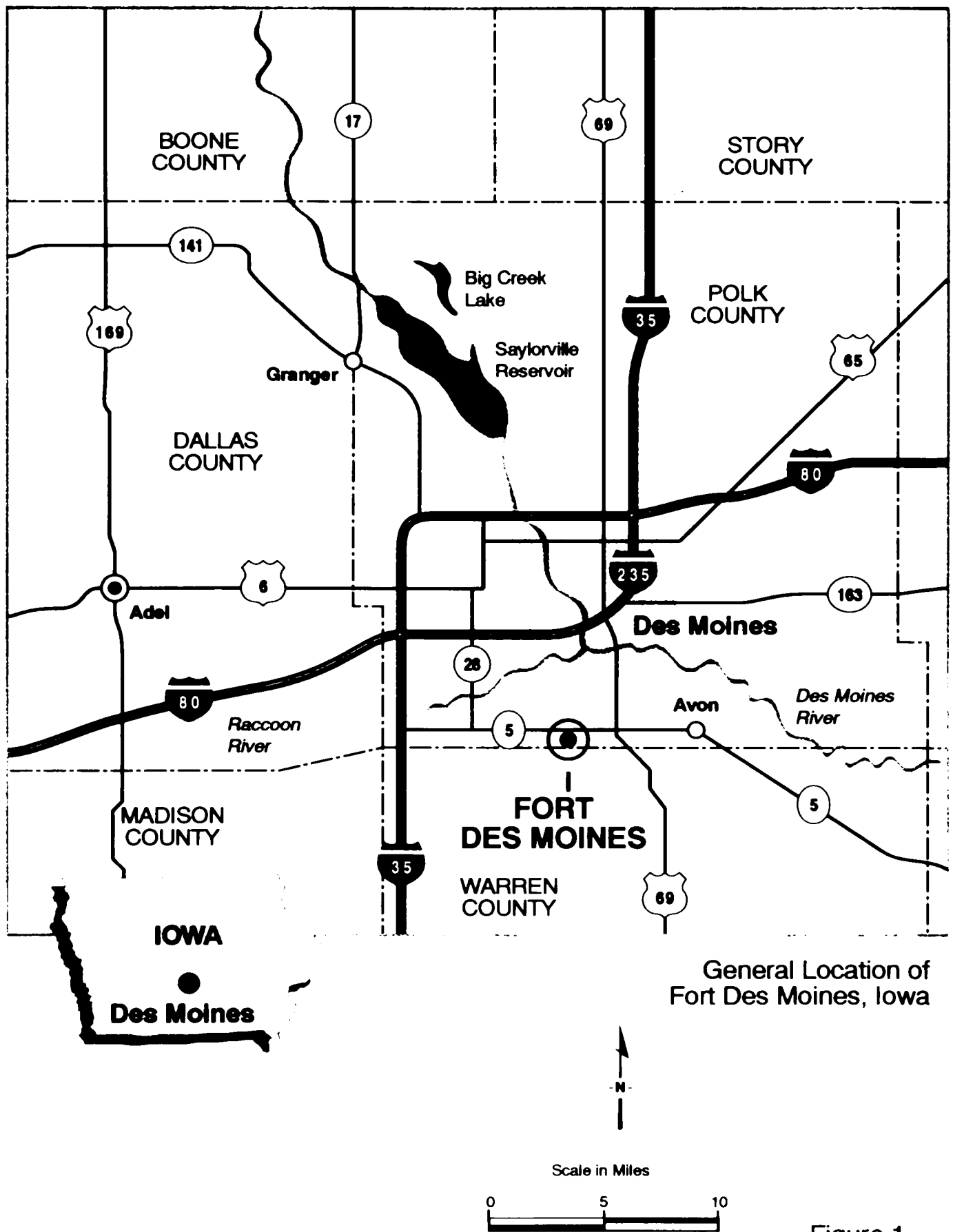
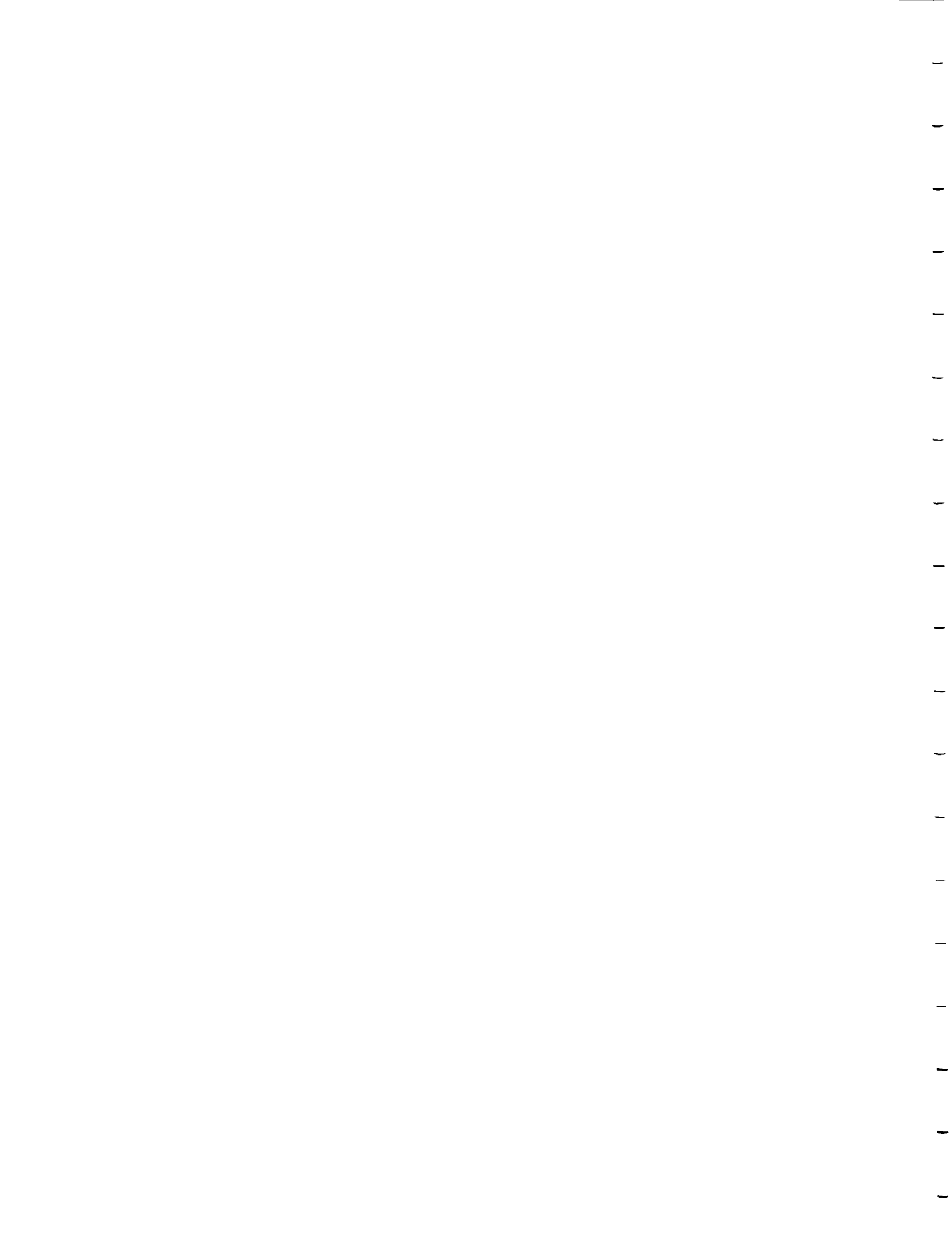


Figure 1



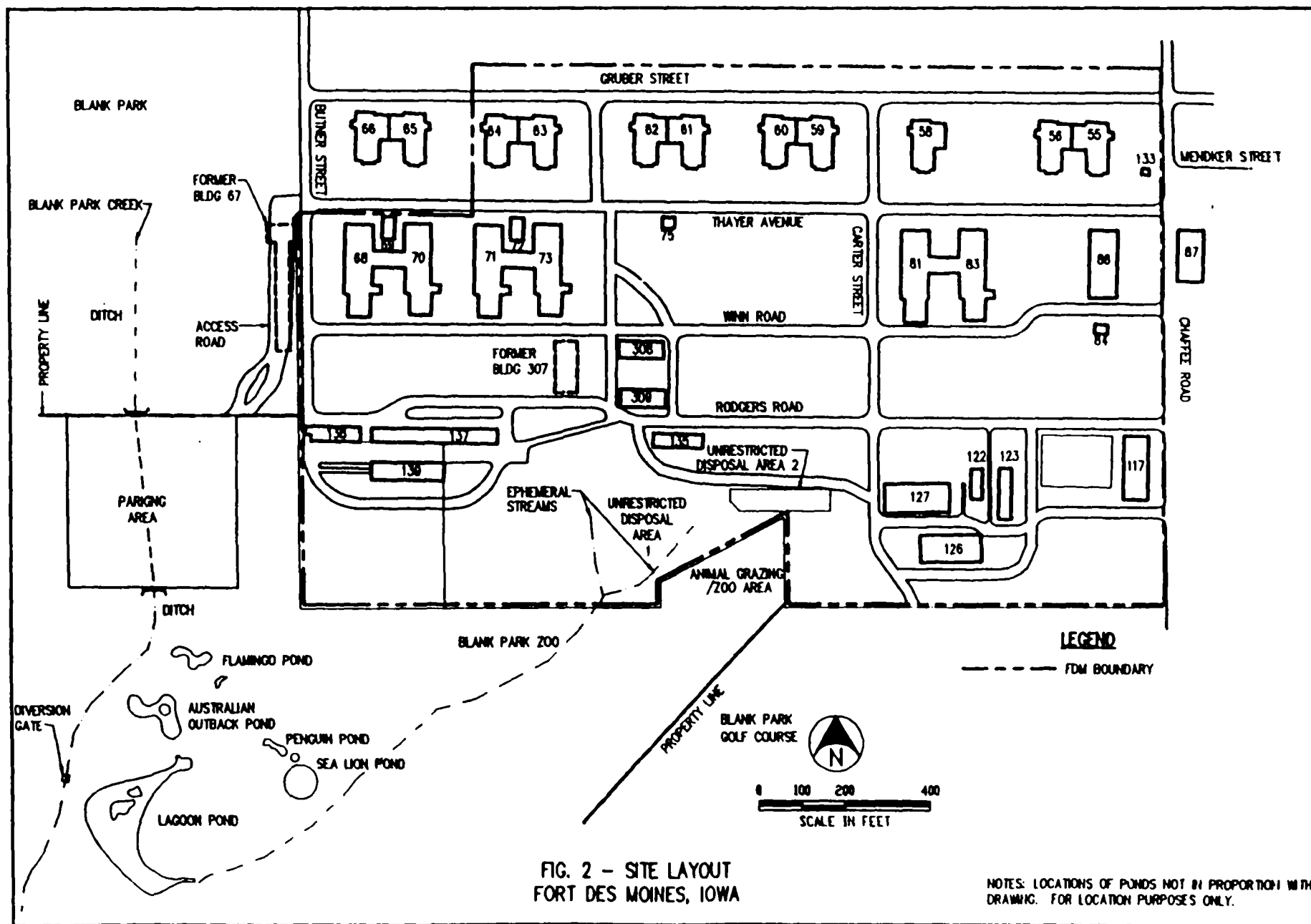


FIG. 2 - SITE LAYOUT
FORT DES MOINES, IOWA

2.1.3 Groundwater and Surface Water Resources

The primary aquifer that could be impacted by the contamination at FDM is the water table, or surficial, aquifer. It is composed of unconsolidated glacial drift materials and is commonly encountered between 10 to 50 feet below existing grade (beg) in Polk County. Glacial drift materials are considered to be poor aquifers, with yields less than 10 gallons per minute (gpm). Because of current county use restrictions, the surficial aquifer is not used as a drinking water supply at FDM. Below the surficial aquifer, the next water bearing unit is approximately 450 feet below grade. There does not appear to be any direct connection between these two aquifers because of the presence of an aquiclude.

The nearest major bodies of surface water to the property are the Des Moines River and the Raccoon River, a small tributary. The junction of these rivers is approximately 4 miles north of the site. These rivers are considered too distant to affect or be affected by localized groundwater flow patterns at the site.

2.2 Site History and Enforcement Activities

FDM was used primarily as a training camp, is listed on the National Register of Historic Places, and is a National Historic Landmark. It served as the first training facility for black officers in the Army and was used as a training center for the Women's Army Auxiliary Corps (WAAC) in 1942. Buildings constructed prior to 1917 are considered to be historical structures and are afforded special protection with respect to demolition and alterations/repairs. Twenty seven of the 33 structures within the current FDM are subject to this special protection.

The most environmentally significant tenant operation during the history of FDM was the leasing of Buildings 67 and 138 by the Army to the Barco Chemical Company for pesticide blending operations between 1950 and 1959. Building 67 has since been demolished. It was located on a parcel near the western boundary of the current FDM that has been transferred to county ownership for use as a public park. Building 138, which is located within the current BRAC boundary of FDM, is currently being remediated by the Omaha District of the U.S. Army Corps of Engineers in accordance with a rapid response cleanup plan delineated in a public meeting held in August 1995. The building and immediate adjacent areas are currently secured to minimize access during restoration activities.

A series of environmental investigations have been ongoing at FDM since 1988. More recently, an Environmental Investigation/Risk Assessment/Alternatives Analysis (EI/RA/AA) was conducted as part of the base closure process, between November 1990 and March 1993, and included a baseline risk assessment and an evaluation of remedial alternatives. This most recent study identified 12 areas of environmental concern associated with the current FDM. The twelve identified areas of concern are the subject of this Decision Document.

FDM has not been the subject of any State or Federal site investigations and is not currently under any enforcement actions relating to the contamination present at the facility.

2.3 Highlights of Community Involvement

The proposed plan for Fort Des Moines was made available to the public on August 2, 1995, at the following information repository locations in Des Moines, Iowa: the Des Moines Public Library (both the Southside and Main Branches), and the Army Reserve Center on

Army Post Road. The notice of availability of the proposed plan was published in the Des Moines Register on August 1, 1995. The public comment period began on August 2, 1995, and ended on September 2, 1995.

A public meeting was held at the Army Reserve Center in Des Moines on August 31, 1995, to inform the public of the preferred alternative and to seek and address public comments. At this meeting, representatives from Fort McCoy, the Omaha District of the Army Corps of Engineers, the U.S. Army Environmental Center (USAEC), and Versar, Inc. (an environmental consultant) answered questions about the site and the remedial alternatives under consideration. No comments were received either during the 30-day comment period or at the public meeting relating to the Proposed Plan (see Section 3.0, Responsiveness Summary).

2.4 Scope and Role of Response Action

The overall role of the preferred cleanup alternative for FDM is to address the identified areas of concern by instituting the necessary cleanup actions to comply with CERCLA and the Army's BRAC program, and to prepare FDM for eventual property transfer. Thus, the primary objective of the selected alternative is to reduce both on-site and off-site future exposure to the pesticides and associated contaminants detected in soil and shallow groundwater resulting from historic activities associated with Building 138 and former Building 67.

Under the Preferred Alternate, the storm sewer line and shallow contaminated soils will be removed from the area around Building 138. The remediation endpoints for soil are the Risk-Based Concentrations (RBCs) developed by EPA Region III for industrial soils. Soil removal will continue in lifts until the concentrations of contaminants in the soil are at or below the RBCs. These criteria are being used for remediation goals because no other Applicable or Relevant and Appropriate Requirements (ARARs) were identified for the pesticide-contaminated soils.

The maximum contaminant levels (MCLs), promulgated by EPA as part of the Primary Drinking Water Standards, were selected for FDM as the effective endpoint for groundwater cleanup. Under the Preferred Alternative, groundwater will be monitored quarterly for a period of 1 year. After that period, an evaluation of the monitoring data will be performed to determine if the groundwater cleanup goals are being achieved (i.e., concentrations being reduced to MCLs or lower. If the goals are being achieved, the Army will present the results to the regulators to ascertain if additional groundwater monitoring is necessary.

The building-related areas of concern are primarily health and safety, indoor air quality, or industrial health types of issues and are not covered or addressed under CERCLA. In order to expedite the remediation and cleanup of environmental issues at FDM and to provide complete documentation, the Army has included these issues in this Decision Document.

Another consideration regarding cleanup actions is the environmental issues (i.e., radon, ACMs, and LBP) associated with the buildings themselves. Because only two of the on-site buildings currently are occupied (as offices), current human health risks associated with the current status of radon, ACMs, and LBP, are minimal. All unoccupied buildings are locked and access points are boarded shut to prevent entry. The Army's choice to address radon, ACMs, and LBP is to require new owners to take responsibility for remediation, abatement and management of these items after deed transfer.

Since the completion of the EI/RA/AA Report, an Addendum was prepared because additional information on the site was obtained after completion of the field activities in 1993. The U.S. Army Corps of Engineers (Omaha District) performed additional sampling at Building 138 in 1994 and determined that pesticide contamination within the structure was not as high as originally estimated (using conservative assumptions provided in the EI/RA/AA report). This additional information determined that the building did not have to be demolished with the resultant debris disposed of as hazardous waste.

2.5 Site Characteristics

The National Priorities List (NPL) is a list promulgated by the U.S. EPA to designate a priority to sites exhibiting an eminent hazard to human health and/or the environment. The current Fort Des Moines is not included on the NPL generated by the Superfund Program.

Twelve areas of concern were the subject of the EI/RA/AA. These areas are described in the text below and are shown on Figure 3.

- Unrestricted Disposal Area 1 - Uncontrolled dumping of tires, furniture, appliances, and bulk residential-type items had occurred here in the past. No evidence was found to indicate that chemical disposal had occurred in this area.
- USTs - Four tanks required removal and closure to comply with state requirements. The four tanks consisted of a 10,000-gallon gasoline tank and a 1,500-gallon fuel oil tank (near Building 127) and two 500-gallon fuel oil tanks (near Buildings 83 and 86). The removal of these USTs is almost complete, but was left in this plan for economic comparisons.
- PCB Transformers - Thirty-three transformers at 19 on-site locations were evaluated for the presence of PCBs. Five of the 33 transformers were found to be "PCB-containing" because they contain PCBs at concentrations greater than 500 parts per million (ppm). Eight transformers were found to be "PCB-contaminated" because they contained PCBs at concentrations between 50 and 500 ppm.
- Small Arms Firing Range Sand - Buildings 58 and 81 contained indoor small arms firing ranges equipped with sand pits to collect spent ammunition. As a result, the sand pits contain elevated levels of several metals, primarily lead. It is estimated that approximately 12 cubic yards of sand within these buildings would require removal and disposal. It has also been determined that Building 56 also contained a small indoor firing range.
- Stored Inventory of Chemicals - Small quantities of chemical materials are stored at various locations throughout FDM. These materials include old paint and lubricants, miscellaneous petroleum products, etc. An estimated 1,650 gallons of stored materials require removal and appropriate disposal.
- Building 138 - Pesticides and herbicides are present throughout the interior of this building (primarily in the basement) as the result of historic pesticide and herbicide blending activities conducted between 1951 and 1959.

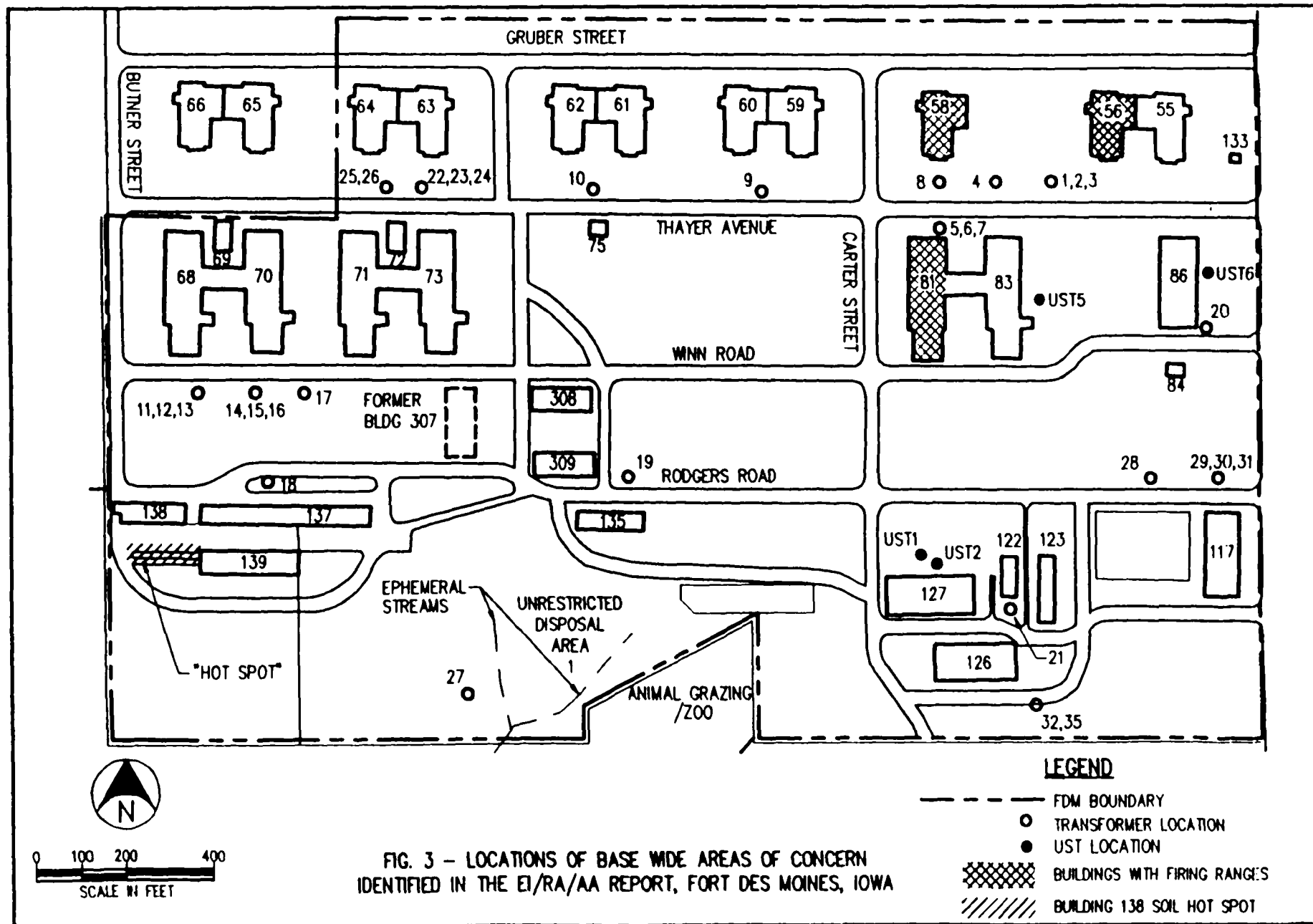
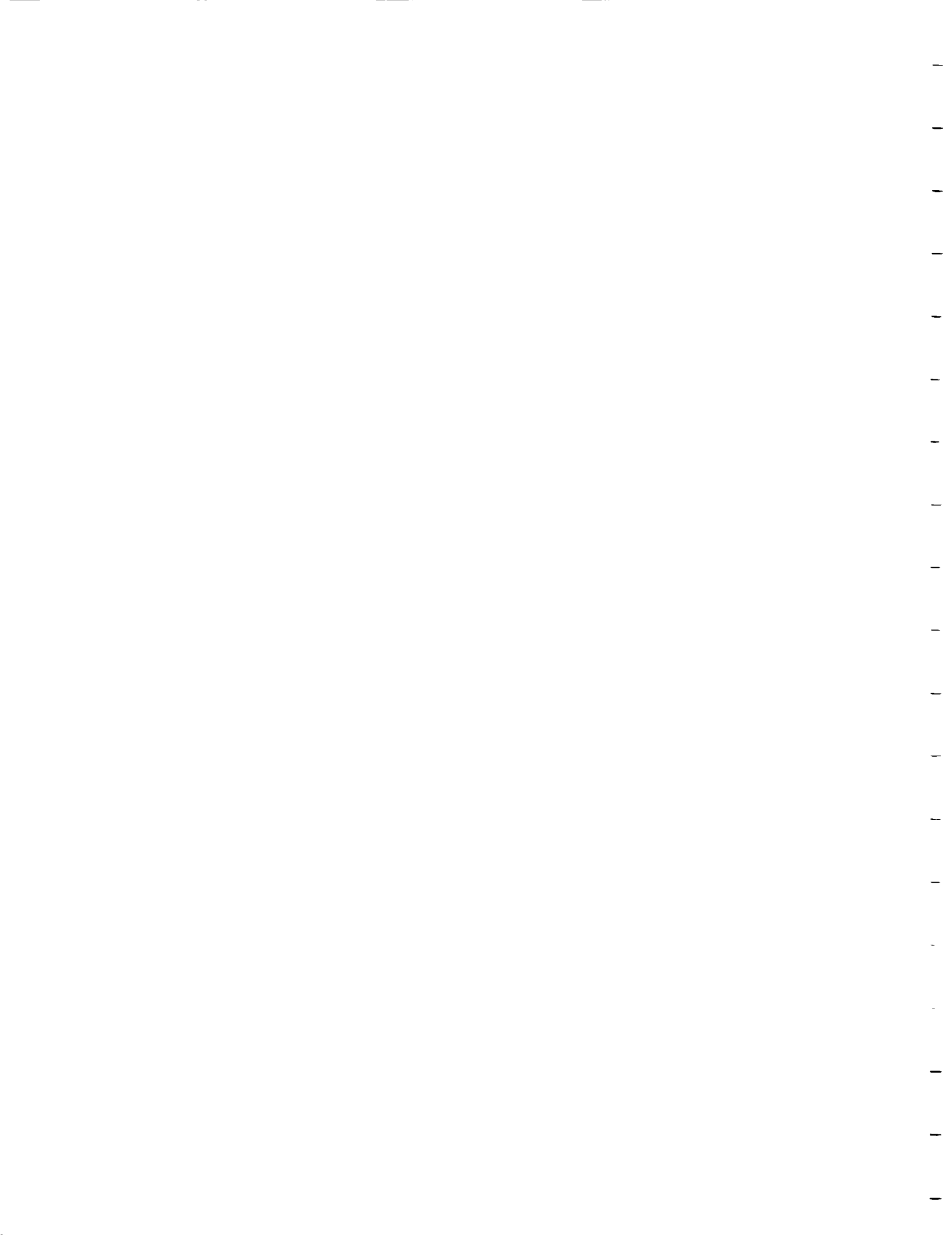


FIG. 3 - LOCATIONS OF BASE WIDE AREAS OF CONCERN IDENTIFIED IN THE EI/RA/AA REPORT, FORT DES MOINES, IOWA



- Radon - A facility-wide radon evaluation was conducted as part of the environmental investigation. Radon levels above the EPA guidance level of 4.0 picocuries per liter (pCi/L) were detected only in Buildings 63 (5.4 pCi/L) and 72 (7.3 and 7.8 pCi/L) during the initial and followup confirmation sampling effort.
- Asbestos-containing Materials (ACM) - Asbestos sampling was conducted in every building with the exception of Building 138, which was not sampled because of both structural hazards and the presence of pesticides. The ACMs detected included both friable materials (i.e., breaks readily apart in your hand), such as pipe insulation and elbows and boiler tank insulation, and non-friable materials, such as floor tile/linoleum, and transite panels.
- Lead-based Paint (LBP) - Facility-wide sampling indicated that the majority of the composite building paint samples exceeded the lead guidance level of 0.5 percent by weight set by the U.S. Department of Housing and Urban Development (HUD). Because of the sampling results and the age of the on-site buildings, all structures were assumed to have some LBP present.
- Groundwater - Volatile organic compounds (VOCs) and pesticides at or above ARARs were detected in the shallow aquifer near Building 138 and former Building 67. The presence of these contaminants may be associated with historic pesticide and herbicide blending activities at the two buildings. The suspected source of this contamination is the storm sewer line that runs between the two buildings.
- Soil - Pesticides were detected in soil samples collected around the above mentioned buildings during the EI. The highest concentrations occurred in a "hot spot", located just to the south of Building 138. In addition, soil samples collected between the two buildings contained elevated levels of pesticides, VOCs, and low levels of dioxin.
- Blank Park Creek Sediments - Pesticides and a limited number of metals were detected in sediment samples collected from Blank Park Creek, which is located west of the current FDM boundary. This creek is an ephemeral stream that receives stormwater runoff from not only the current FDM, but also from nearby roadways and properties to the north and west. The study results suggested that numerous nearby off-site, non-point sources may be substantial contributors for the contaminants detected in the stream. The potential on-site contributing contaminant sources (e.g., the storm sewer line between Building 138 and former Building 67) for the constituents detected in the creek were identified in the EI/RA/AA Report. It is felt that the cleanup of identified on-site sources (e.g., excavation and removal of the storm sewer line), as discussed in the EI/RA/AA Report and elsewhere in this document, would adequately address this particular area of concern as it relates to the current FDM. Therefore, this area of concern was not addressed specifically in the alternative analyses as were the other areas.

2.6 Summary of Site Risks

As part of the EI/RA/AA, a Baseline Risk Assessment (BRA) was conducted to evaluate the current or future potential health or environmental problems that could result if

the identified areas of concern at FDM were not addressed or remediated. The BRA for FDM evaluated human health risks (i.e., cancerous and noncancerous health effects) under no-action alternative exposure conditions (i.e., in the absence of any cleanup actions to control or mitigate contaminant releases or exposures) for the current land use at the site. Because the site will be closed and transferred from the Federal Government ownership to public/private use, the RA also considered potential health effects that could result from direct public exposure to contaminants under future potential land use scenarios, including residential uses. A key consideration used in preparation of the risk assessment was the fact that Polk County health regulations prohibit the installation of drinking water wells in the shallow aquifer in areas where municipal water is accessible. This restriction minimizes the chances of direct public exposure to the shallow groundwater at FDM. The potential risks to the present and possible future populations at FDM also were evaluated. The population classifications used for this evaluation included residents, recreational users, commercial users, and construction workers.

The result of the BRA indicated that only three areas/media at the FDM site were found to pose significant potential risks to human health. They were: dust in the interior of Building 138, the shallow soil around Building 138, and the groundwater for the entire site. The total carcinogenic risk from dust within Building 138 was estimated to pose only a slight risk to juvenile trespassers and is currently being addressed. All remaining significant human health risk estimates were associated with future residential-use exposure scenarios. In addition, although the groundwater was found to pose a significant risk, it is not currently used at the site, nor is it expected to be used in the near future, for on-site or off-site consumption.

2.7 Description of Alternatives

An analysis of potentially applicable cleanup methods was performed for the twelve areas of environmental concern that were described earlier. Various methods or solutions were selected for each area of concern based on their general implementability and effectiveness at the respective sites. After screening out those solutions that were determined not to be effective, the most appropriate solutions were grouped into three categories. These are:

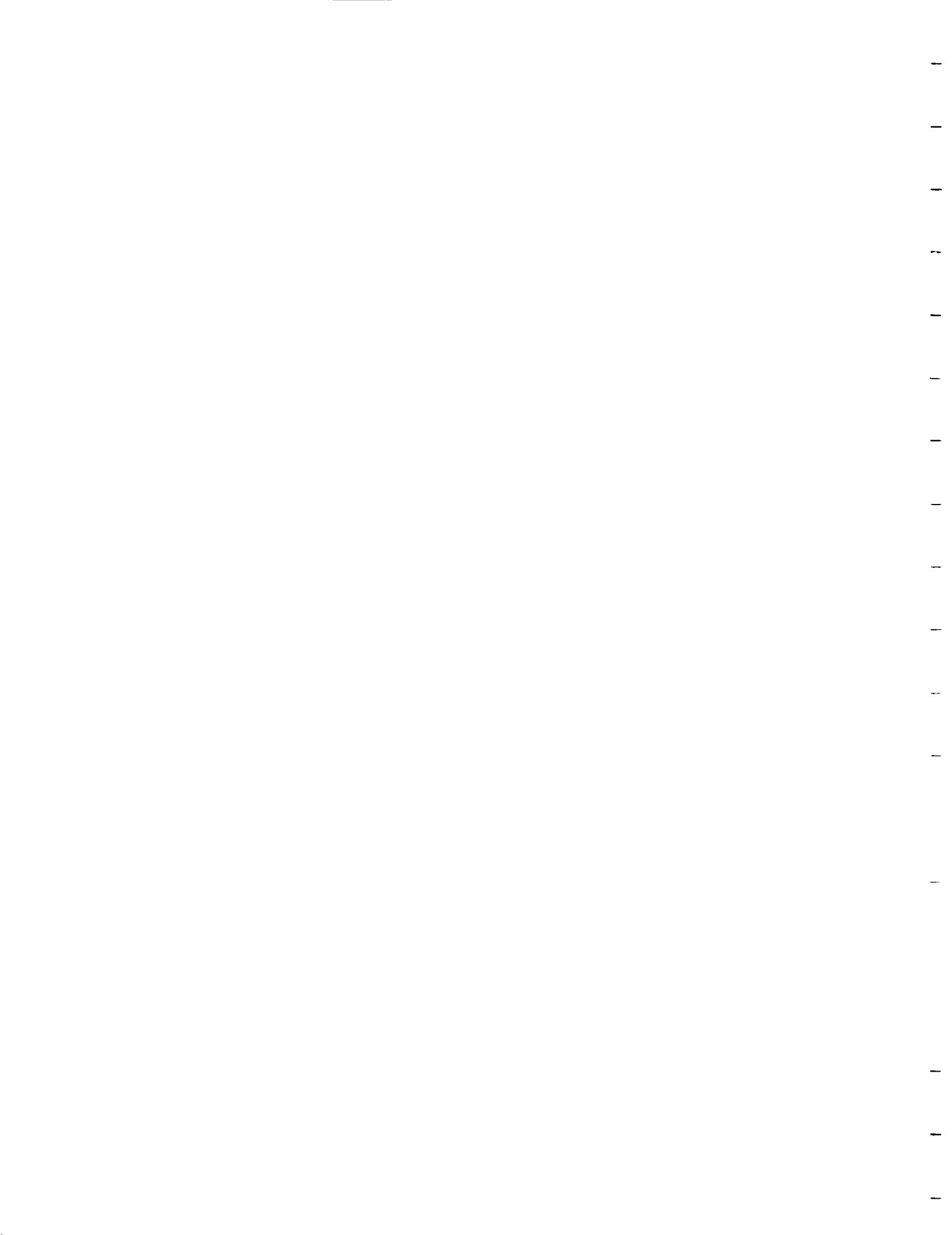
- Category 1 - Single remedy solutions for those areas of concern having only one recommended cleanup solution;
- Category 2 - Remedial actions related to radon, asbestos, and lead-based paint in existing buildings; and
- Category 3 - Remedial actions related to groundwater cleanup.

2.7.1 Description of Categories

This section discusses the selected remedial options that will effectively address the areas of concern that have been grouped into the three categories listed above.

2.7.1.1 Category 1

This category consists of seven areas of concern that have only a single recommended remedial solution. These are:



- Building 138 Interior - Remove and dispose of dust and residue, stored chemicals, friable ACMs, and elevator shaft fluid; power wash applicable building materials; dispose of fluids and solid waste as potential hazardous waste materials.
- Surface Soils Around Building 138 - Excavate soil "hot spot" south of Building 138 and transport for off-site disposal at a RCRA permitted facility.
- Unrestricted Disposal Area 1 - Collect and properly dispose of debris.
- Underground Storage Tanks - Closure of the four remaining tanks by excavation and removal in accordance with state regulations. The removal of these tanks is almost complete.
- Electrical Transformers - Drain and properly dispose of fluid from 13 transformers (i.e., five PCB-containing; eight PCB-contaminated); properly clean and dispose of the drained transformers.
- Small Arms Firing Ranges - Perform hazardous waste characterization analysis on the sand within the buildings, and dispose of it in accordance with applicable regulatory criteria.
- Stored Chemical Materials - Collect, lab-pack, and transport for proper off-site disposal.

2.7.1.2 Category 2

Three options were considered for addressing radon, asbestos, and lead-based paint in the existing buildings at FDM, based on the current and possible future building use scenarios. These scenarios are:

1. Buildings Remain Unoccupied - No action for radon, ACMs, or LBP, continue access restrictions.
2. Buildings Prepared for Commercial Reoccupancy - Monitor for the presence of radon for 1 year in Buildings 63 and 72; and removal of friable ACM and partial removal of LBP with development of Operations & Maintenance (O&M) plans for the remaining materials.
3. Buildings Demolished - No action for radon; remove and dispose of LBP and friable ACM; and demolish buildings.

2.7.1.3 Category 3

Four options were considered for addressing contaminated groundwater at the site. These options were:

1. No Action
2. Source Removal - Excavation and removal of the storm sewer line and contaminated soils between Building 138 and former Building 67. All waste would be transported off-site for disposal at a RCRA-permitted facility.

3. Long-term Monitoring - Source removal (Option 2) along with long-term groundwater monitoring at selected existing groundwater monitoring wells. A 30-year monitoring period was chosen for costing purposes.
4. Pump and Discharge - Source removal (Option 2) along with extraction of groundwater and discharge via the local sewer system to the local publicly-owned treatment works (POTW).

2.7.2 Site-Wide Alternatives

Based on different combinations of the three above referenced categories, the EI/RA/AA report established 10 separate site-wide cleanup alternatives. These 10 alternatives were evaluated according to the nine Superfund evaluation criteria. Five of the alternatives were retained for further consideration, and presented for regulatory and additional Army review. During this additional review, one of the alternatives was re-introduced. This re-introduced alternative includes portions of the other five retained alternatives, but in a slightly different combination. Except for Alternative 1 (the "No Action" Alternative), each of the alternatives address the remediation of the seven areas of concern identified in Category 1. The estimated common cost for remediating these seven areas of concern is \$363,700. The six retained alternatives are numbered to correspond with the EI/RA/AA report and are summarized in Table 1.

Alternative 1:

No Action for Categories 1, 2 and 3

Capital Cost:	0
O&M Cost:	0
Current Worth Cost:	N/A
Period of Implementation:	N/A

The CERCLA program requires that the "No Action" Alternative be evaluated to provide a baseline for comparison. Under this alternative, the Army and the appropriate regulatory agencies would take no further action. This alternative relies on natural degradation and dispersion processes and continued dilution to remediate the contaminants of concern.

Alternative 3:

Category 1 - Complete remediation of all sites

Category 2 - No Action

Category 3 - Groundwater monitoring program with removal of the storm sewer line between Building 138 and former Building 67

Capital Cost:	\$836,800
O&M Cost:	\$26,100/year
Current Worth Cost:	\$1,288,200
Period of Implementation:	30 Years (chosen for costing purposes)

Table 1 Summary of Alternatives						
Category	Alternative					
	1	3*	4	5	6	10
Complete Remed. (Cat. 1)		X	X	X	X	X
No Action (Cat. 2.1)	X	X	X			
Army Protocol/Reuse (Cat. 2.2)				X	X	
Demolish Buildings (Cat. 2.3)						X
No Action (Cat. 3.1)	X					
Source Removal (Cat. 3.2)				X		
Source Removal and Monitoring (Cat. 3.3)		X			X	
Source Removal and POTW Discharge (Cat. 3.4)			X			X

*Alternative not retained originally for further consideration in the EI/RA/AA Report.

All Category 1 areas of concern will be remediated. While the buildings in Category 2 remain unoccupied, radon, ACM, and LBP are no threat to human health. This option will be effective based on the current use of the buildings, but will not necessarily be a permanent solution.

A groundwater monitoring program will be implemented in addition to source reduction. Source reduction will remove pesticide-contaminated materials from the site that may be contributing to groundwater contamination via infiltration from rainfall, etc. The implementation of the groundwater monitoring program would not aid in complying with health-based criteria, but would allow for observation of future changes in groundwater conditions. Because groundwater use in Polk County is restricted, the contaminated groundwater currently poses little risk to human health. Through use of good engineering controls and proper health and safety measures during implementation of this remedial effort, human and environmental risks would be kept to a minimum.

Alternative 4:

Category 1 - Complete remediation of all sites

Category 2 - No Action

**Category 3 - Extraction wells to collect groundwater for direct discharge to a POTW.
Excavation of the storm sewer line between Building 138 and former
Building 67**

Capital Cost:	\$1,122,000
O&M Cost:	\$144,600/year
Current Worth Cost:	\$2,735,700
Period of Implementation:	15 Years

This alternative would address Category 1 and 2 areas of concern in the same fashion as Alternative 3. Contaminated groundwater would be addressed by the removal of the pesticide-contaminated storm sewer line and contaminated soils and pumping and discharging contaminated groundwater to the local POTW. The implementation of a pump and discharge program will reduce groundwater contaminant levels to below levels set by the State of Iowa; however, this does little to further protect human health. Because groundwater use in Polk County is restricted, direct human exposure is unlikely, therefore, the groundwater should pose little risk to human health. Removal of contaminated materials in the soil that may be contributing to groundwater contamination via infiltration from rainfall, along with natural attenuation, would reduce the effects the contaminants have on the local environment.

Alternative 5:

Category 1 - Complete remediation of all sites

Category 2 - Army protocol followed for radon, ACM, and LBP

**Category 3 - Excavation of the storm sewer line between Building 138 and former
Building 67**

Capital Cost:	\$1,201,700
O&M Cost:	\$0/year
Current Worth Cost:	\$1,201,700
Period of Implementation:	10 Years

All Category 1 areas are addressed. For Category 2 issues, this alternative provides for the monitoring of radon and the removal of ACM and LBP found to be in poor condition. Under this alternative, friable ACM and chipped and cracked LBP, all of which present an immediate human health risk, would be removed. The remaining materials, which would be effectively managed under a long-term O&M plan, might eventually require future remediation. Radon monitoring could end after 1 year or continue for an additional year if remedial measures are taken. The historical preservation covenant would not be breached by reinhabiting the buildings as long as renovation plans are approved by the Advisory Council on Historic Preservation (ACHP).

For the Category 3 or groundwater issues, source removal would be implemented. Removal of materials that may be contributing to groundwater contamination is a feasible response to the low level of contamination detected, considering the restrictions on local use of groundwater and the requirement for residents and businesses to be linked to the municipal water system. No monitoring program would be implemented to observe changes to groundwater conditions. Through the use of good engineering controls and proper health and safety measures, human and environmental risks would be kept to a minimum.

Alternative 6:

Category 1 - Complete remediation of all sites

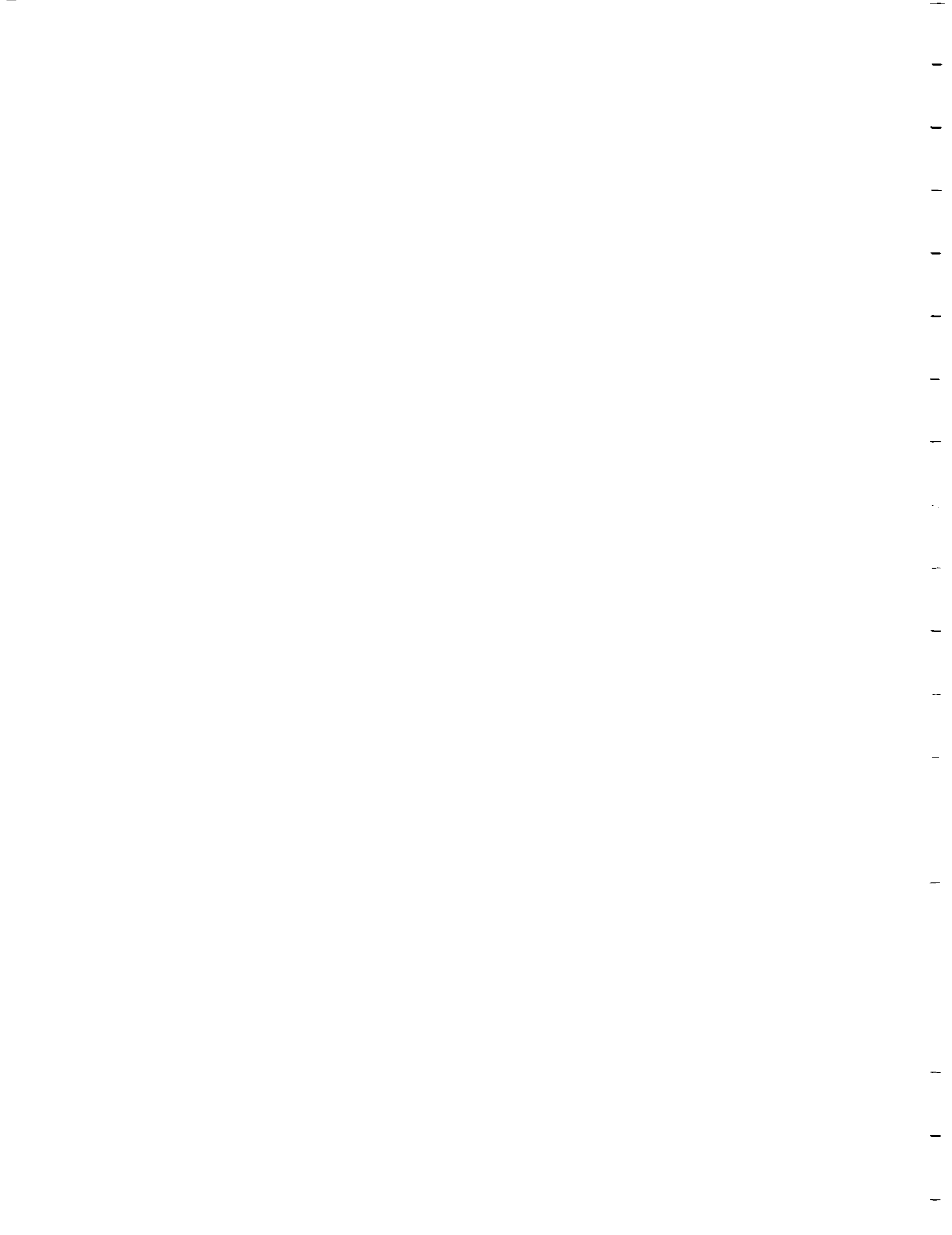
Category 2 - Army protocol followed for radon, ACM, and LBP

Category 3 - Groundwater monitoring program in conjunction with removal of the storm sewer line between Building 138 and former Building 67

Capital Cost:	\$1,217,200
O&M Cost:	\$26,100/year
Current Worth Cost:	\$1,668,200
Period of Implementation:	30 Years

All Category 1 areas are addressed. For Category 2, this alternative provides for the monitoring of radon and the removal of ACM and LBP found to be in poor condition. Under this alternative, friable ACM and chipped and cracked LBP, all of which present an immediate human health risk, would be removed. The remaining materials, which would be effectively managed under a long-term O&M plan, might eventually require future remediation. Radon monitoring could end after 1 year or continue for an additional year if remedial measures are taken. The historical preservation covenant would not be breached by reinhabiting the buildings as long as renovation plans are approved by the ACHP.

For the Category 3 or groundwater issues, source removal would be implemented in addition to the long-term monitoring program. Removal of materials that may be contributing to groundwater contamination is a feasible response to the low level of contamination detected, considering the restrictions on local use of groundwater and the requirement for residents and businesses to be linked to the municipal water system. A monitoring program would be implemented to observe changes to groundwater conditions as a result of source removal, but provides no additional protection to human health or environment. Through the use of good engineering controls and proper health and safety measures, human and environmental risks would be kept to a minimum.



Alternative 10:

Category 1 - Complete remediation of all sites

Category 2 - Completely remove all ACM and LBP no action for radon

**Category 3 - Extraction wells to collect groundwater for direct discharge to a POTW.
Excavation of the storm sewer line between Building 138 and former
Building 67**

Capital Cost:	\$1,946,500
O&M Cost:	\$144,600/year
Current Worth Cost:	\$3,558,800
Period of Implementation:	15 years

All Category 1 areas are addressed. For Category 2, radon would no longer be a concern if the buildings are demolished. Army Base Closure Protocol would be followed for ACM and LBP. All friable ACM and LBP would be removed and disposed of prior to demolition to reduce risk to construction workers. The remaining nonfriable ACM (such as floor tiles) could be included in the building demolition waste. The "debris rule" for characterizing construction debris would be complied with by removing LBP from construction debris prior to disposal. The removed LBP would be handled as hazardous waste and the stripped surfaces as construction debris, with subsequent disposal of the latter in a construction landfill. When demolition plans for buildings are prepared, the plans would be presented to the ACHP because FDM is a historic landmark.

Groundwater issues (Category 3) would be addressed by source reduction of the pesticide-contaminated storm sewer line and pumping and discharging contaminated groundwater to the local POTW. The implementation of a pump and discharge program will reduce groundwater contaminant levels to below the guidance levels set by the State of Iowa; however, this does little to further protect human health. Because groundwater use in Polk County is restricted, direct human exposure is unlikely, therefore, the groundwater should pose little risk to human health. Source reduction will remove contaminated materials that may be contributing to groundwater contamination via infiltration from rainfall, etc. With source reduction, natural attenuation would continue to occur, reducing the effects the contaminants have on the local environment.

A major barrier to the implementation of this alternative may be the concern for the preservation of historically significant structures. The ACHP must be presented with plans for demolition and approve them prior to implementation. A historical records program for the property may need to be implemented by which the historical aspects of the structures are cataloged in print or on film.

2.8 Summary of Comparative Analysis of Alternatives

A comparative analysis of each alternative was conducted to assess the performance of the alternatives relative to each other. The alternatives were compared based on their ability to effectively address each of the nine Superfund evaluation criteria. A synopsis of the comparative analyses can be found in Table 2. Except for Alternative 1 (No Action), the proposed remedial solutions for Category 1 areas of concern adequately address the nine Superfund evaluation criteria.

**TABLE 2
EVALUATION OF ALTERNATIVES**

SUPERFUND EVALUATION CRITERIA

Remedial Alternatives	Protection of Human Health and the Environment	Compliance with ARARs	Long-term Effectiveness and Permanence	Reduction of Toxicity, Mobility, and Volume of Mass	Short-term Effectiveness	Implementability (Technical and Administrative)	Current Worth Cost	State and Community Acceptance
Alternative 1 No action for all three categories	This alternative will not effectively protect human health and environment	Criterion is not applicable because no activities are implemented under this alternative	Alternative is not effective in the long term. Risks will remain and may eventually require remediation in the future	No reduction of toxicity, mobility or volume would be realized	Criterion is not applicable because no activities are implemented under this alternative	Technically feasible, easily performed	No costs	Not likely to be acceptable to agencies or the public, is not protective of human health and the environment
Alternative 3 Cat 1 - Complete remediation of all sites Cat 2 - No action Cat 3 - Groundwater monitoring program with source removal	Human health and the environment are protected in areas that pose an immediate concern	Compliance with ARARs will be achieved	May not be permanent solution for radon, ACM and LBP. Groundwater constituents will be reduced	No reduction of toxicity, mobility or volume of radon, ACM and LBP. Reduction of groundwater constituents likely will occur	Short-term effects to human health and the environment can be minimized through proper engineering controls and effective Health & Safety measures	Implementable	Moderately expensive, total cost of \$1,288,200	No negative comments were received either from the State or the local community
Alternative 4 Cat 1 - Complete remediation of all sites Cat 2 - No action Cat 3 - Extraction wells to collect groundwater for direct discharge to a POTW and source removal	Human health and the environment are protected in areas that pose an immediate concern	Compliance with ARARs will be achieved	May not be permanent solution for radon, ACM and LBP. Groundwater constituents will be reduced	No reduction of toxicity, mobility and volume of radon, ACM and LBP. Reduction of groundwater constituents will occur	Short-term effects to human health and the environment can be minimized through proper engineering controls and effective Health & Safety measures	Implementable	Expensive, total cost of \$2,735,700	No negative comments were received either from the State or the local community
Alternative 5 Cat 1 - Complete remediation of all sites Cat 2 - Army protocol for building related areas Cat 3 - Source removal	Human health and the environment are protected in areas that pose an immediate threat	Compliance with ARARs will be achieved	Building-related concerns will be addressed, but may require some future remediation. Natural attenuation of groundwater contamination will occur with time	No reduction of toxicity, mobility or volume of radon, ACM and LBP. Reduction of groundwater contamination will occur	Short-term effects to human health and the environment can be minimized through proper engineering controls and effective Health & Safety measures	Implementable	Moderately expensive, total cost of \$1,201,700	No negative comments were received either from the State or the local community
Alternative 6 Cat 1 - Complete remediation of all sites Cat 2 - Army protocol followed for radon, ACM and LBP Cat 3 - Groundwater monitoring program with source removal	Human health and the environment are protected in areas that pose an immediate concern	Compliance with ARARs will be achieved	Building-related concerns will be addressed, but may require some future remediation. Groundwater constituents will be reduced	Some reduction of toxicity, mobility or volume of radon, ACM and LBP will be achieved. Reduction of groundwater constituents likely will occur	Short-term effects to human health and the environment can be minimized through proper engineering controls and effective Health & Safety measures	Implementable	Moderately expensive, total cost of \$1,668,200	No negative comments were received either from the State or the local community
Alternative 10 Cat 1 - Complete remediation of all sites Cat 2 - Completely remove all ACM and lead-based paint no action for radon Cat 3 - Extraction wells to collect groundwater for direct discharge to a POTW and source removal	Human health and the environment are protected in areas that pose an immediate concern	Compliance with ARARs will be achieved	Radon gas is no longer an issue. Complete removal of ACM and LBP will be accomplished. Groundwater constituents will be reduced	Adequate reduction will occur for radon, ACM, LBP and groundwater constituents	Short-term effects to human health and the environment can be minimized through proper engineering controls and effective Health & Safety measures	Implementable - The only expected barrier of concern is for preservation of historic structures at FDM	Most expensive, total cost of \$3,558,800	No negative comments were received either from the State or the local community

2.8.1 Overall Protection of Human Health and the Environment

With the exception of Alternative 1, all of the alternatives provide some level of protection of human health and the environment. For radon, ACM, and LBP (Category 2), the risk to human health is minimal because all but two of the buildings currently are unoccupied. Hence, the "No Action" option presented for each of the Category 2 areas of concern in Alternatives 1, 3, and 4 is viable and protective. If, however, future plans for the buildings include reoccupancy (as in Alternatives 5 and 6), or demolition (as in Alternative 10), then the prescribed actions for these alternatives are appropriate. The reoccupancy alternatives, which include abatement of damaged materials for ACM and LBP, also provide for O&M plans for monitoring the remaining materials. Within Alternatives 1, 3, 4, 5, and 6, limited human exposure remains. The complete abatement performed for the demolition of the buildings (Alternative 10) removes any exposure to future inhabitants.

For groundwater problems (Category 3), source removal (all alternatives except for 1), consisting of the excavation of the stormwater line between Building 138 and former Building 67, and the decontamination of Building 138, effectively contributes to the protection of human health and the environment. By removing the source of contamination, additional potential groundwater contamination would be eliminated. Secondly, the restrictions already in place for groundwater use in Polk County minimize the possibility of exposure to humans.

The use of a groundwater monitoring program, as suggested in Alternatives 3 and 6, does not necessarily increase the protection of human health or the environment; however, the program will monitor the effectiveness of the source removal and can be used to determine if additional remedial actions are necessary. The implementation of a groundwater pump and discharge system to the POTW (as in Alternatives 4 and 10) will increase the protection to the environment by removing contaminants from the groundwater and lowering contaminant concentrations. The removal of the contaminant sources, however, is still the most effective overall action in preventing any additional contamination from entering the groundwater.

2.8.2 Compliance with ARARs

ARARs for groundwater, surface water, and soil are discussed in Section 3.1.2 of the EI/RA/AA. For groundwater, the MCLs promulgated by EPA as part of the Primary Drinking Water Standards, will be used for cleanup goals at the site. For soil, remediation endpoints will be the latest RBCs for residential soils developed by EPA Region III, which are updated periodically as new toxicological information becomes available. ARARs for LBP, asbestos, and radon are also discussed in Section 3.0 of the EI/RA/AA. For all these three health risks, reduction to exposure is the appropriate remedial action.

No compliance with ARARs is achieved with Alternative 1. Under the remaining five alternatives, prevention of inhalation/ingestion to radon, ACM, and LBP would be achieved. Under Alternatives 3 and 4, access to the buildings would be restricted and, therefore, exposure unlikely. In Alternatives 5 and 6, radon, ACM, and LBP are addressed as prescribed by the Army Base Closure Protocol (which follows EPA guidelines) in order to reduce human exposure. If the buildings are to be reoccupied (as in Alternatives 5 and 6), the historical significance of the buildings needs to be considered, and measures need to be taken to consult with the ACHP on the rehabilitation plans. If demolition is planned for the buildings, the building-related scenario given in Alternative 10 should be followed. All friable ACM would be removed prior to demolition and handled separately from construction debris. Additionally,

all LBP would be properly stripped from the building surfaces for disposal as hazardous waste prior to demolition.

For groundwater, source removal is included under five alternatives to prevent further degradation in groundwater. Alternatives 3 and 6 also include a groundwater monitoring program, which in itself, does not assist in compliance with ARARs, but rather ensures that the contaminated portion does not migrate off site and that groundwater quality is maintained within derived limits. The pump and discharge scenario in Alternatives 4 and 10 could actively reduce contaminant concentrations and meet groundwater ARARs; however, the technical feasibility of such a system is questionable due to the hydrogeologic conditions at the site. Because Polk County codes prohibit the use of the shallow groundwater, however, the implementation of a pump and treat system is not necessary to reduce the potential for human exposure.

2.8.3 Long-term Effectiveness and Permanence

The No Action alternative (Alternative 1) does not provide long-term effectiveness and permanence, except that building access restrictions would continue. The affected buildings are currently unoccupied, however that will probably not be their permanent status. The remedial actions proposed for ACM and LBP in Alternative 10 are a permanent response to these areas of concern. The scenario of partial abatement of ACM and LBP with O&M plans, as proposed in Alternatives 5 and 6, would be effective for the long term.

Source reduction for the groundwater contamination under Alternatives 3, 4, 5, 6, and 10 is a permanent and long-term action. Monitoring of the groundwater does not add to the long-term effectiveness of Alternatives 3 and 6, but can provide data for observing the potential decrease of contaminants in groundwater following implementation of source removal. The pump and discharge option under Alternatives 4 and 10 for groundwater would increase the long-term effectiveness only slightly. The most effective measure for eliminating risks or hazards associated with the shallow groundwater is through Polk County's current use restriction code.

2.8.4 Reduction of Toxicity, Mobility, or Volume

The reduction of toxicity, mobility, or volume by treatment is accomplished in most of the Category 1 areas of concern. For the Category 2 and 3 areas of concern (i.e., radon, ACM, LBP, groundwater), active reduction only occurs when the extracted groundwater is treated at the POTW as in Alternatives 4 and 10; however, the reduction of these characteristics apply to treatment technologies, and have little influence on the effectiveness of the cleanup options presented.

2.8.5 Short-term Effectiveness

The short-term effectiveness evaluation criterion is not applicable to Alternative 1 because no remedial activities are implemented. All the other alternatives should be effective in the short term, if proper engineering controls and effective health and safety measures are employed during demolition activities. Alternative 10 is the most likely to have potentially detrimental short-term effects because it involves extensive demolition activities. The remediation proposed in this alternative is the most extensive and requires complete remediation of ACM and LBP.

2.8.6 Implementability

Technically, Alternative 1 is easily implementable because the activities would be limited to continuance of institutional controls. Administratively, this alternative is not implementable, because various regulatory agencies would find this alternative unacceptable. Alternatives 3 and 6 provide additional protection through monitoring of the groundwater, but require a long-term commitment and, outside of source removal, offer no active reduction in the groundwater contaminants or the associated liability. Alternatives 4 and 10 do provide for the cleanup of the groundwater. The local POTW would require no pretreatment for the extracted groundwater at the expected contaminant levels.

The options provided for cleanup of the areas of concern in all three categories are all technically implementable in that they apply proven, reliable, and effective methods. The services and equipment necessary to carry the alternatives through to completion are all readily available. The National Historic Preservation Act, however, may pose, under Alternative 10, an administrative impediment to the demolition of some of the potentially historically significant buildings.

2.8.7 Cost

Table 3 summarizes the estimated costs (in 1995 dollars) associated with each of the six retained alternatives. The implementation of Alternative 1, No Action, involves no additional cost, and continued access restrictions would involve little expenditure.

The remaining five alternatives share an estimated fixed cost of \$363,700, which includes the costs associated with remediation of the Category 1 areas. The Category 1 costs include: UST removals; PCB transformer disposal; sand disposal at the Firing Ranges; decontamination of Building 138; excavation and disposal of contaminated soils from the Building 138 "hot spot"; disposal of stored chemicals; and removal and disposal of debris in the Unrestricted Disposal Area 1. This fixed cost differs from the \$680,000 (in 1993 dollars) listed for the Category 1 costs in the EI/RA/AA report because demolition of Building 138 and disposal of the debris as a hazardous waste is no longer necessary.

Costs in each of the alternatives (except Alternative 1) include addressing the Category 2 building-related areas of concern. Alternatives 3 and 4 have no Category 2 costs because "No Action" is the remedial response. Alternatives 5 and 6 include Category 2 costs (\$380,000) for the removal of ACM and LBP that is in poor condition and the development of an O&M plans. Alternative 10 contains the highest Category 2 costs (\$823,100), which involve the complete removal of all LBP and all friable ACM, in preparation for building demolition.

The additional estimated costs for the Category 3 concerns include: \$458,000 for the storm sewer removal (Alternatives 3, 4, 5, 6, and 10); \$466,000 for long-term groundwater monitoring (Alternatives 3 and 6); and \$1,914,000 for pump and discharge of the contaminated groundwater (Alternatives 4 and 10). In 1996, the storm sewer removal was accomplished at an actual cost of \$827,000.

2.8.8 State Acceptance

The State of Iowa has reviewed the EI/RA/AA and has associated documents. The Army has received no negative responses concerning the remedial alternatives discussed in this document.

TABLE 3 Selected Alternatives and Cost Estimate Summary (All Costs are in 1995 Dollars)				
Alternative	Category 1¹ Single Remedial Actions	Category 2 Building Related Areas	Category 3 Groundwater²	Totals²
1	- 0 - No Action	- 0 - No Action	- 0 - No Action	- 0 -
3	\$363,700	- 0 - No Action	\$924,500 (1,293,500) Storm sewer line removal; Monitoring	\$1,288,200 (1,657,200)
4	\$363,700	-0- No Action	\$2,372,000 (2,741,000) Storm sewer line removal; Pump and Discharge to POTW	\$2,735,700 (3,104,700)
5	\$363,700	\$380,000 Partial Removal/O&M	\$458,000 (827,000) Source Reduction	\$1,201,700 (1,570,700)
6	\$363,700	\$380,000 Partial Removal/O&M	\$924,500 (1,293,500) Storm sewer line removal; Monitoring	\$1,668,200 (2,037,200)
10	\$363,700	\$823,100 Complete Removal	\$2,372,000 (2,741,000) Storm sewer line removal; Pump and Discharge to POTW	\$3,558,800 (3,927,800)
¹ Category 1 remedial actions, with the exception of Alternative 1 - No Action, consist of: UST Removal Transformer Disposal Small Arms Firing Range Sand Disposal Decontamination of Building 138 Treatment of Surface Soils Around Building 138 Disposal of Stored Chemicals Removal and Disposal of Debris from Unrestricted Disposal Area 1 ² Costs in parentheses reflect the inclusion of actual sewer removal costs.				

2.8.9 Community Acceptance

Community Acceptance is determined based on public comments received on the EI/RA/AA report and the Proposed Plan. During the 30-day comment period conducted for this project, no public comments were received, indicating community acceptance of the proposed remedial alternatives.

2.9 Summary of the Preferred Alternative

The Army's preferred cleanup option is Alternative 3, which consists of remediating all Category 1 areas; no action for radon, LBP, and friable ACM under Category 2; and a groundwater monitoring program along with the removal of the storm sewer line between Building 138 and former Building 67 for Category 3. The estimated cost of the preferred alternative is \$1,288,200. It will require about 2 years to fully implement. Sampling and monitoring of the groundwater is expected to be performed quarterly for 1 year, although for comparative costing purposes, a 30-year duration was assumed.

Building-specific issues regarding ACMs, radon, and LBP can not be adequately addressed as the future usage of buildings at FDM have not been completely decided. The Army's preferred options for addressing the building-specific concerns are to continue to prevent access to those buildings retained by the Army and full disclosure of the building-specific concerns prior to deed transfer for the buildings that are sold. Currently all but two of the buildings are uninhabited; therefore, there is no current human health risk associated with exposure to ACMs, radon, or LBP.

For Category 3 (groundwater) issues, the preferred alternative (source removal and a groundwater monitoring program) is considered the most viable option for cleanup of the contaminated groundwater. This decision is based on the following reasons: (1) the relatively low concentrations of contaminants in the shallow groundwater; (2) removal of the contaminated soils and storm sewer line would prevent additional contaminants from entering the groundwater and attenuation of contaminant concentrations would occur over time; (3) hydrogeologic tests indicate that the affected portion of the shallow aquifer has a low transmissivity and well yield capacity, limiting the effectiveness of a pump and treat system; and (4) current restrictions on the use of the shallow aquifer by Polk County effectively eliminates direct human exposure and, therefore, risks.

As presented earlier in this Decision Document, the storm sewer and surrounding soils between Building 138 and former Building 67 would be excavated and transported off site for disposal. All soils with contaminant concentrations greater than EPA Region III's RBCs for industrial soils would be removed. For the groundwater monitoring program, all existing monitoring wells would be sampled on a quarterly basis and analyzed for pesticides and heavy metals. After a period of 1 year, the sampling data will be reviewed to evaluate whether groundwater contaminant concentrations are decreasing (as expected) to levels at or below drinking water MCLs, as a result of source removal and natural attenuation. The results of this sampling will be presented to the regulators to determine if continued monitoring of the groundwater is necessary.

Compliance with ARARs is achieved by the implementation of Alternative 3. Source reduction for the groundwater is a feasible response to the low level contamination, considering the county restrictions on local groundwater use and the requirement for residents and businesses to be linked to the municipal water system.

Administratively, no barriers to the implementation of this alternative are expected in that the activities that would be undertaken entail standard practices. Obtaining applicable permits and approvals is expected to be a relatively uncomplicated process. The short-term effects of this alternative to human health and the environment during implementation can be minimized through the use of proper engineering controls and effective health and safety measures.

2.10 Documentation of Significant Changes

The Army presented a proposed plan (preferred alternative) for addressing the identified areas of concern at Fort Des Moines during a public meeting on August 31, 1995. The proposed alternative presented in the Proposed Plan (July 26, 1995) is the same as the selected alternative (Alternative 3) presented in this Decision Document. No significant changes were made to the proposed alternative as a result of the public comment period and public meeting.

3.0 RESPONSIVENESS SUMMARY

The final component of the Decision Document is the Responsiveness Summary, which serves two purposes. First it provides the agency decision makers with information about community preferences regarding the remedial alternatives and general concerns about the site. Second, it demonstrates to members of the public how their concerns were taken into account as part of the decision-making process.

A 30-day comment period was conducted during August 1995 to solicit public comments of the EI/RA/AA and the Proposed Plan. Concurrently, copies of the Final EI/RA/AA and Proposed Plan were provided to EPA Region VII and the State of Iowa for their review and concurrence. During the comment period, no public comments were received on the preferred remedial alternatives, indicating the community has shown no significant concern with the selected remedy.

A public meeting was held at the Army Reserve Center on Army Post Road near Fort Des Moines on August 31, 1995, to inform the public of the preferred alternative and to seek public comments. At this meeting representatives of Fort McCoy, the Omaha District of the U.S. Army Corps of Engineers, the USAEC, and Versar, Inc., presented the proposed remedy. Approximately 22 persons from the public and media attended the meeting. No questions were asked during the informal question and answer period specific to the identified areas of concern within the current FDM, a BRAC facility.

Several questions, however, were generated at the meeting regarding how the Army would address potential future environmental problems that might arise within parcels of land that once were part of the original larger version of FDM. Army Corps representatives (Omaha District) assured the questioners that if such problems were a result of former Army activities at FDM, the Army would still be responsible to address them; however, problems originating from excised portions of old FDM would be treated as FUDS (Formerly Utilized Defense Site) issues, as opposed to a BRAC issue that pertains only to the identified areas of concern associated with the current FDM.

